

AMENDMENTS TO THE CLAIMS

1. Claim 1 (currently amended): A capillary device for ~~vaporization of~~ vaporizing liquid, ~~[the device]~~ comprising:

a vaporizer component having ~~[a capillary network,]~~ a liquid receiving surface to receive liquid[;] and a vaporization area in which vapor is produced from the liquid, the vaporizer component characterized by an interconnected network of associated structural elements selected from among: aligned cylinders; columns; reticulated spaces; struts; as well as combinations of any of the foregoing;

a heat transfer component to convey heat to the vaporization component, the heat transfer component further comprising at least one opening to release vapor at a velocity greater than zero; and

a porous insulation component capable of at least substantially shielding the liquid from the heat prior to vaporization.[; ~~and~~

~~an ejection surface having one or more openings to release vapor at a velocity greater than zero].~~

2. Claim 2 (cancelled).

3. Claim 3 (cancelled).

4. Claim 4 (currently amended): The device of claim 1, ~~further including one or more passageways leading away from the vaporization area for escape of dissolved gas wherein~~ the heat transfer component further comprises vapor collection channels formed by fins, posts, curved spirals as well as combinations of any of the foregoing.

5. Claim 5 (Represented in independent form - formerly dependent on Claim 1):

~~The device of claim 1;~~ A capillary device for vaporizing liquid, comprising:

a vaporizer component having a liquid receiving surface to receive liquid and a vaporization area in which vapor is produced from the liquid;

a heat transfer component to convey heat to the vaporization component, the heat transfer component further comprising at least one opening to release vapor at a velocity greater than zero; and

a porous insulation component capable of at least substantially shielding the liquid from the heat prior to vaporization;

wherein having a concentric arrangement of the vaporizer component, heat transfer component and insulation component are in annular arrangement, and [in which] further wherein fluid flow is from a center area of the device to an outer periphery of the device.

6. Claim 6 (currently amended): The device of claim 5, wherein the heat transfer component is an internal heater proximal to the outer periphery of the device.

7. Claim 7 (Represented in independent form - formerly dependent on Claim 1): ~~The device of claim 1~~ A device for vaporizing liquid, comprising:

a vaporizer component having a liquid receiving surface to receive liquid and a vaporization area in which vapor is produced from the liquid;

a heat transfer component to convey heat to the vaporization component, the heat transfer component further comprising at least one opening to release vapor at a velocity greater than zero; and

a porous insulation component capable of at least substantially shielding the liquid from the heat prior to vaporization; and

~~wherein having a concentric arrangement of~~ the vaporizer component, heat transfer component and insulation component are in annular arrangement, and ~~[in which]~~ further wherein fluid flow is from an outer periphery of the device to a center area of the device.

8. Claim 8 (currently amended): The device of claim 5, wherein the heat transfer component is an internal heater proximal to the center area of the device.

9. Claim 9 (currently amended): The device of claim 1, further including a liquid treatment component capable of treating the liquid prior to vaporization, wherein the liquid treatment component comprises a modified vaporization component, a modified heat transfer component, a modified insulation component, a treatment component in proximal contact with the vaporization component, a treatment component in proximal contact with the insulation component, as well as combinations of any of the foregoing.

10. Claim 10 (currently amended): The device of claim 9, wherein the liquid treatment ~~[component includes]~~ comprises activated carbon, diatomaceous earth, silica, zeolites, anti-oxidants, filtration aids, contaminant removal aids, catalysts as well as combinations of any of the foregoing [a fragrance compound, a disinfectant, an insecticide [or] an industrial chemical for release into the liquid].

11. Claim 11 (currently amended): The device of claim 1, further including a vapor treatment ~~[component]~~ element capable of treating the vapor prior to its release ~~[of the vapor]~~.

12. Claim 12 (currently amended): The device of claim ~~[1]~~ 2, ~~further including a liquid pretreatment component~~ wherein, prior to vaporization of the liquid, the liquid treatment is capable of removing constituents from the liquid, adding constituents to the liquid, ~~[or]~~ reacting with constituents in the liquid ~~[prior to vaporization]~~, as well as combinations of any of the foregoing.

13. Claim 13 (currently amended): The device of claim 1, further including an internal combustion engine, a [or microturbine] micro turbine, as well as combinations of any of

the foregoing, [arranged to receive] for receiving vapor output from the ~~vaporizer component device.~~

14. Claim 14 (cancelled).

15. Claim 15 (currently amended): The ~~[pump of claim 14]~~ device of claim 1 further comprising a porous preheat layer ~~to raise the temperature of the liquid prior to the liquid entering the vaporization layer.~~

16. Claim 16 (cancelled).

17. Claim 17 (cancelled).

18. Claim 18 (cancelled).

19. Claim 19 (currently amended). A pump ~~[system]~~ array for vaporization of liquid, ~~[the system comprising:] comprising [one or more] a plurality of the devices of claim 1 [and at least one liquid supply source in fluidic communication with the one or more devices].~~

20. Claim 20 (cancelled).

21. Claim 21 (currently amended): The pump ~~[system]~~ array of claim 19, further comprising a controller in communication with ~~[each device and capable of individually controlling the heating of each device]~~ the array for permitting control of heater input, liquid feed input, vaporization component temperature, vapor output, as well as combinations of any of the foregoing via control characterized as automated, manual, as well as combinations of automated and manual user control.

22. Claim 22 (currently amended): The pump ~~[system]~~ array of claim 19, ~~[wherein]~~ further comprising a [separate] liquid supply [source is provided] to feed liquid to [each device] the array.

23. Claim 23 (currently amended): The pump ~~[system]~~ array of claim ~~[19]~~ 22, wherein ~~[a common]~~ the liquid supply [source is provided] is selected from among a separate feed source for providing [to feed the] liquid [in]to each device, a common feed source for providing liquid to multiple devices, as well as combinations of any of the foregoing.

24. Claim 24 (currently amended): The pump ~~[system]~~ array of claim 19, further including a second heater component capable of melting a solid ~~[feed]~~ to form the liquid. ~~[in the supply source]~~.

25. Claim 25 (currently amended): The pump ~~[system]~~ array of claim 19, further including:

a common vapor chamber ~~[to receive]~~ for collecting vapor output [released] from each device; and

at least one orifice [one or more orifices] in the common vapor chamber ~~[providing vapor]~~ for the release of vapor from the array.

26. Claim 26 (cancelled).

27. Claim 27 (cancelled).

28. Claim 28 (cancelled).

29. Claim 29 (newly amended). The device of claim ~~[26]~~ 1, further including at least one passageway in gas communication with the vaporization component [one or more passageways leading away from the vaporization area] for the escape of dissolved gas.

30. Claim 30 (new): In a capillary device for vaporizing liquid, the improvement comprising a vaporizer component characterized by an interconnected network of associated

structural elements selected from among: aligned cylinders; columns; reticulated spaces; struts; as well as combinations of any of the foregoing.

31. Claim 31 (new): A capillary device for releasing vapor at a velocity greater than zero having a vaporizer component characterized by an interconnected network of associated structural elements selected from among: aligned cylinders; columns; reticulated spaces; struts; as well as combinations of any of the foregoing.

32. Claim 32 (new): The device of claim 1, wherein the received liquid comprises: gasoline; white gas; diesel fuel; kerosene; decane; JP8; alcohols including, but not necessarily limited to: ethanol; isopropanol; biodiesel; water; fragrance compounds; crop treatments; insect repellents; insect attractants; medical compositions including, but not necessarily limited to: antiseptics and inhalants; as well as combinations of any of the foregoing.